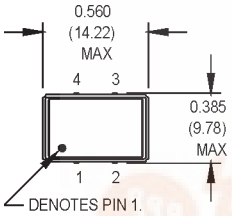
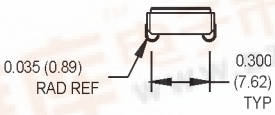
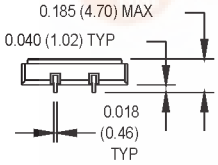
M5R Series

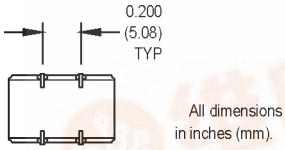
9x14 mm, 3.3 Volt, LVPECL/LVDS, Clock Oscillator

RoHS Compliant

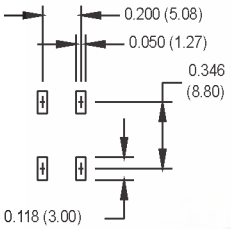


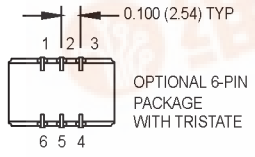


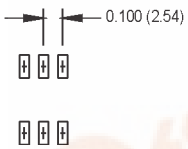




SUGGESTED SOLDER PAD LAYOUT







Pin Connections

FUNCTION	4 Pin	6 Pin
N/C or Output $\overline{Q}$	1	1
Enable		2
Ground/Cover	2	3
Output Q	3	4
N/C		5
+Vcc	4	6

Ordering Information

M5R 1 8 Z Q J -R 00.0000 MHz

- **Product Series**
- **Temperature Range**
  - **1:** 0°C to +70°C
  - **2:** -40°C to +85°C
  - **6:** -20°C to +70°C
  - **7:** -0°C to +85°C
  - **8:** 0°C to +50°C
- **Stability**
  - **3:** ±100 ppm
  - **4:** ±50 ppm
  - **5:** ±35 ppm
  - **6:** ±25 ppm
  - **8:** ±20 ppm
- **Output Type**
  - **R:** Complementary Enable
  - **T:** Single Enable
  - **Z:** Complementary w/o Enable
  - **X:** Single w/o Enable
- **Symmetry/Output Logic Type**
  - **L:** 45/55% LVDS
  - **P:** 45/55% PECL
  - **H:** 40/60% LVDS
  - **Q:** 40/60% PECL
- **Package/Lead Configurations**
  - **J:** J-lead
- **RoHS Compliance**
  - **Blank:** non-RoHS compliant part
  - **-R:** RoHS compliant part
- **Frequency (customer specified)**

1. Calibration, deviation over temperature, shock, vibration, and aging.
2. PECL load - see load circuit diagram #5. LVDS load - see load circuit diagram #9.
M2011Sxxx - Contact factory for datasheet.

	PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Electrical Specifications	Frequency Range	F	0.75		800	MHz	
	Operating Temperature	TA	(See ordering information)				
	Storage Temperature	Ts	-55		+125	°C	
	Frequency Stability	ΔF/F	(See ordering information)				See Note 1
	Aging 1st Year Thereafter (per year)			 ±2 ±1		 ppm ppm	
	Input Voltage	Vcc	3.135	3.3	3.465	V	
	PECL Input Current	Icc			60 95 105	mA mA mA	0.75 to 24 MHz 24 to 96 MHz 96 to 800 MHz
	LVDS Input Current	Icc			30 60	mA mA	0.75 to 24 MHz 24 to 800 MHz
	Output Type						PECL/LVDS
	Load		50 Ohms to Vcc - 2 VCD 100 Ohm differential load				See Note 2 PECL Waveform LVDS Waveform
	Symmetry (Duty Cycle)		(See ordering information)				@ Vcc-1.3 VDC (LVPECL) @ 50% of waveform (LVDS)
	Output Skew				200	ps	PECL
	Differential Voltage		250	350	450	mV	LVDS
	Logic "1" Level	Voh	Vcc -1.02			V	PECL
	Logic "0" Level	Vol			Vcc -1.63	V	PECL
	Rise/Fall Time	Tr/Tf		0.35 0.50	0.55 1.0	ns ns	@ 20/80% LVPECL @ 20/80% LVDS
	Enable Function		80% Vcc min or N/C: output active 20% Vcc max: output disables to high-Z				"R" & "T" output types
	Start up Time				10	ms	
	Phase Jitter >/=20 MHz	ϕJ		 3	 5	 ps RMS	Integrated 12 kHz – 20 MHz
Environmental							
	Mechanical Shock	MIL-STD-202, Method 213, C (100 g's)					
	Vibration	MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
	Thermal Cycle	MIL-STD-883, Method 1010, B (-55°C to +125°C, 15 min dwell, 10 cycles)					
	Hermeticity	MIL-STD-202, Method 112					
	Solderability	Per EIAJ-STD-002					
	Max Soldering Conditions	See solder profile, Figure 1					

1. Calibration, deviation over temperature, shock, vibration and aging.
2. PECL load - see Load Circuit Diagram #5. LVDS load – see load circuit diagram #9.

MtronPTI Lead Free Solder Profile